Clinical-Pathological Conference

A white American bellboy, 50 years old, entered the hospital on January 2, 1948, with sore throat of nine days' duration.

The patient has always lived in the United States except for a seven-month trip to Alaska in 1943. He said that he consumed a moderate amount of alcohol. A brother had died of tuberculosis.

Present Illness: The patient was feeling well on December 1, 1947, when he went on a vacation to Blue Lake in Northern California. There he drank some raw milk. A few days later a head cold developed and it persisted. On December 25, 1947, after returning to San Francisco, he noticed a sore throat and began coughing up small amounts of white phlegm. These symptoms increased and he went to bed because of chilly feelings, headache, malaise, and generalized aching. The cough became productive of about two cups of white material daily. At the same time there were slight dyspnea and mild anterior chest pain. On December 28 diarrhea developed, with five to seven loose brownish-black stools daily, and mid-abdominal cramps. The patient ate little and lost about 15 pounds.

Although well developed, the patient was thin and appeared to be exhausted. He coughed intermittently. The temperature was 103° F., the pulse rate was 130, and respirations 32 per minute. Blood pressure was 100 mm. of mercury systolic and 65 mm. diastolic. The skin was warm and moist. The nasal mucosa was inflamed, with crusted exudate, and the soft palate and pharynx were highly injected and edematous. No abnormalities were found in the neck, and the lungs were clear to percussion and auscultation. The heart was not enlarged and the rhythm was regular. A soft systolic blowing murmur was heard along the left sternal border. The abdomen was soft and non-tender, and a soft, non-tender liver edge was felt 3 cm. below the right costal margin. There were no abnormalities in the extremities.

Examination of the blood showed a value for hemoglobin of 13 gm. per 100 cc. Erythrocytes numbered 4.2 million and leukocytes 4,500 with 34 per cent polymorphonuclear cells (26 per cent segmented and 8 per cent non-segmented), 60 per cent lymphocytes and 6 per cent monocytes. Corrected erythrocyte sedimentation rate was 24 mm. in one hour. The urine was normal. Results of a Wassermann test were negative. There was no growth on four blood cultures. Alpha streptococci and non-hemolytic staphylococci were identified in a smear from the throat. Studies of the blood for viruses, cold and heterophile agglutinins were negative, as were results of all agglutination tests. The feces were watery, green-yellow. No ova or parasites were seen in stool specimens either in the hospital laboratory or in the health department laboratory. A stool culture grew no abnormal organisms. Nothing of note was found in the sputum which was examined unstained and stained by both Gram and Ziehl-Neelsen methods. A roentgenogram of the chest showed no abnormality.

Course: The fever varied from 100.6° to 103° F. and the patient weakened progressively. Several loose green stools were passed but the main complaint continued to be sore throat. On January 9, leukocytes numbered 22,000, with 78 per cent polymorphonuclear cells (63 per cent segmented and 15 per cent non-segmented). Penicillin was given without apparent benefit. Repeat agglutinations done January 13, 1948, were positive for typhoid in a dilution of 1:80, but agglutinations the next day again were negative. On January 14, the patient complained of abdominal pain and that evening appeared much worse, with a pulse rate of 144 and no blood pressure reading obtainable. There was tenderness and guarding in the left lower quadrant which soon spread to the entire abdomen, with rebound tenderness. Peristalsis remained active. The blood pressure rose briefly to 90 mm. of mercury systolic and 50 mm. diastolic following intravenous injection of blood and fluids, but it soon fell again and the patient died on the morning of January 15.

From the San Francisco Hospital, May 11, 1948.

CLINICAL DISCUSSION

DR. EDGAR WAYBURN*: The course of illness in this patient may be divided into three major phases. The first begins early in December and lasts through most of that month. The chief symptoms are those of a systemic disease, presumably an infection (headache, malaise, chilly feeling, generalized aching), with partial localization to the respiratory tract as shown by the cough productive of as much as two cups of white sputum daily, dyspnea and chest pain. The second phase is revealed and spotlighted by the statement that on December 28 mid-abdominal cramps began, with diarrhea of five to seven loose brownish black stools daily. Shortly after this the patient entered the hospital. At this time he appeared rather severely ill for one who had developed symptoms less than a month before. The physical signs that he had lost a good deal of weight and was dehydrated and exhausted, offer no localizing clues. The laboratory data indicate that the staff was diligent and suspicious of a variety of conditions, and, further, that it was forestalled in its wide search by running into a number of dead-end negative tests.

At this point we may consider the various diagnostic possibilities, as they must have appeared to the attending staff, and where they seem to lead. We are confronted by a severe, subacute to chronic disease which appears to be advancing rapidly and which seems to have attacked both the respiratory and gastro-intestinal systems. The straw man which must be set up in diagnosis is typhoid fever. The onset and the course, the involvement of the respiratory as well as the gastro-intestinal tract are not unfamiliar. The low leukocyte count with a low per-

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centage of neutrophiles in the smear is an ancillary sign of value, as is the appearance of the stool. However, all of the confirmatory tests were negative repeatedly—the blood cultures, the stool cultures and the agglutination tests. (An agglutination test positive for typhoid in 1:80 dilution is without significance, particularly when others are completely negative before and afterward.)

The second disease to consider is tuberculosis, which may very well attack both the respiratory and gastro-intestinal tracts, as this disease did. Here again, all of the laboratory studies negate the historical data: The sputum and the roentgenogram of the chest are the two most important studies here. (In passing, one wonders how the patient could have so much cough, chest pain and sputum and still have a normal appearing roentgenogram of the chest as well as absence of physical signs.)

The third disease which deserves major consideration is amebiasis. The manifestations of amebiasis are protean and the symptoms may be respiratory as well as intestinal. There is nothing in the history or the physical signs of this patient which may not be caused by amebiasis. The laboratory test which could make the diagnosis—the microscopic examination of the feces—is negative, but amebae are all too often not demonstrated, even when special effort is made to find them.

Other conditions which one may consider are systemic fungus infection and regional ileitis, but neither appears very likely. Mention of the fact that raw milk was drunk reminds us that infected raw milk may cause brucellosis as well as typhoid, but brucellosis also appears unlikely.

The third phase of this patient's course began January 9, at which time the leukocyte count was 22,000 with 78 per cent polymorphonuclear neutrophiles. We presume that the blood examination was done at this time because of some change in the clinical status, although there is no mention of it. Whatever the change was, it caused the attending physician to administer penicillin, without apparent effect. Five days later, on January 14, the patient developed signs which suggest perforation of a viscus—or perhaps hemorrhage—followed by shock and peritonitis.

Whatever may be the primary diagnosis, I believe that we have the right to state that the terminal episode, the immediate cause of death, was perforation, probably of the intestine, followed by peritonitis.

To return to the primary diagnosis, we have a condition which has progressed rapidly and lethally over a known period of five weeks and which has involved the intestine in an ulcerative process which ends in perforation. I think that we may rule out tuberculosis first, for in order to have tuberculous enterocolitis of this severity and nature the patient would almost have to have pulmonary tuberculosis of sufficient chronicity and degree to cause indicative physical signs, sputum positive for tuberculosis and manifestations on a roentgenogram of the chest.

With regard to typhoid fever, one may say that the course of illness in this case was not typical of the average case of typhoid. However, in these days when typhoid is a sporadic disease, one sees more atypical than characteristic courses. The description of watery green-yellow stools rouses memories of "pea-soup" and the leukocyte count of 4,500 with 34 per cent neutrophiles fits no other disease quite so aptly. From there on, however, the result of every laboratory test is lined up against the possibility of typhoid. Cultures of the blood and of the stool were negative; one set of agglutination tests suggests agglutination in a dilution of 1:80—which is certainly doubtful in any case—but similar tests done both before and after this one are entirely negative. These are procedures which are performed commonly and which should have been positive sooner or later if the patient had typhoid.

Coming back to amebiasis: The only way to be positive of the diagnosis of this disease is to demonstrate the causative parasite in the feces or in the tissues. Stool examinations were negative in this case, but the demonstration of amebae is notoriously unsuccessful. Amebiasis would explain, better than typhoid fever, the pulmonary symptoms (of which the patient apparently complained more than the intestinal) which one could account for on the basis of multiple abscesses too small to be demonstrated in a roentgenogram. In this case ulcerative lesions in the intestine, with perforation of one of the ulcers, might be suspected.

Clinical Diagnosis: Amebiasis with perforation of intestinal ulcer.

DISCUSSION BY PATHOLOGIST

DR. W. W. MCLAUGHLIN*: The peritoneal cavity contained about 400 cc. of turbid yellow fluid and the peritoneal surfaces were covered with much patchy friable exudate. In the mid-portion of the transverse colon there was a 4 mm. perforation which was partly covered by adherent fatty tissue. This perforation was in the base of an ulcer which was deeply undermined. There were numerous ragged, "moth-eaten," often undermined ulcers measuring up to 2 cm. across in the colon which were characteristic of those produced by amebiasis. They were more numerous in the proximal portion of the colon; the sigmoid was not involved. Histologically, some of the ulcers had a typical flask shape and amebae were present.

The right lung weighed 650 grams. The lower lobe, hyperemic and edematous, contained patches of consolidation plus several ragged cavities.

There was fibrinous exudate over the pleural surface. The bronchi were hyperemic. Histologically, the pneumonia was found to be secondary to aspiration, with formation of multiple abscesses. This may well have been associated with the peritonitis, which may have preceded the pneumonia. The abscesses in the lung did not resemble amebic abscesses and did not contain amebae. Some of the changes in the right lung were old enough to have accounted for the respiratory symptoms noted clinically in late December. However, separate unrelated pneumonia at this time is another possibility. An incidental finding was healed cirrhosis of the liver.

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